



# Dark side of the moon

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## **Dark side of the moon-China's successful mission will greatly advance knowledge of earth's satellite**

- China joined a select group of countries with successful missions to the moon, when its spacecraft, Chang'e-4, successfully made a landing at '10.26 on January 3', according to the China National Space Administration.
- It landed at a spot on the moon's far side, the Von Kármán crater, which is untouched by earlier missions from earth.
- After landing, Chang'e-4, named after the Chinese moon goddess, relayed a close-up image of the 'far' side of the moon through the communication relay satellite Queqiao.
- The Queqiao satellite was launched last May by China for the very purpose of helping Chang'e-4 communicate with earth, as a direct communication with it is not possible from the moon's far side, which never faces earth.
- The Chang'e-4 mission carries payloads, of which two are in collaboration with Germany and Sweden, respectively.
- The instruments include cameras, low-frequency radio spectrum analyser, lunar neutron and radiation dose detectors, and many more.
- Among other things, the mission could pave the way to setting up a radio telescope on the far side of the moon.
- The near side, which faces earth, has dark patterns; the far side, turned away, is marked with circular spots that are craters formed by meteorite collisions.
- The moon's near side is believed to have a thinner shell, so that when meteorites bombarded it they cracked its shell, releasing lava which gushed out and covered traces of the impact and left dark patches.
- Being thicker, the far side did not face such an erasure and bears the marks of the crater impacts.
- This mission could verify these theories and discover the reason behind these dichotomies.

- The moon's far side also differs from the near side in that it is shielded from all the radio waves emanating from earth.
- Communication devices and satellites have made it too noisy for radio astronomers to easily and accurately interpret signals.
- The near side of the moon also suffers from this problem of noise.
- China has now joined the U.S. and the former USSR as the only countries to have made a "soft landing" on the moon.
- But beyond underlining China's technological advances, Chang'e-4 could herald a new chapter in lunar exploration.

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